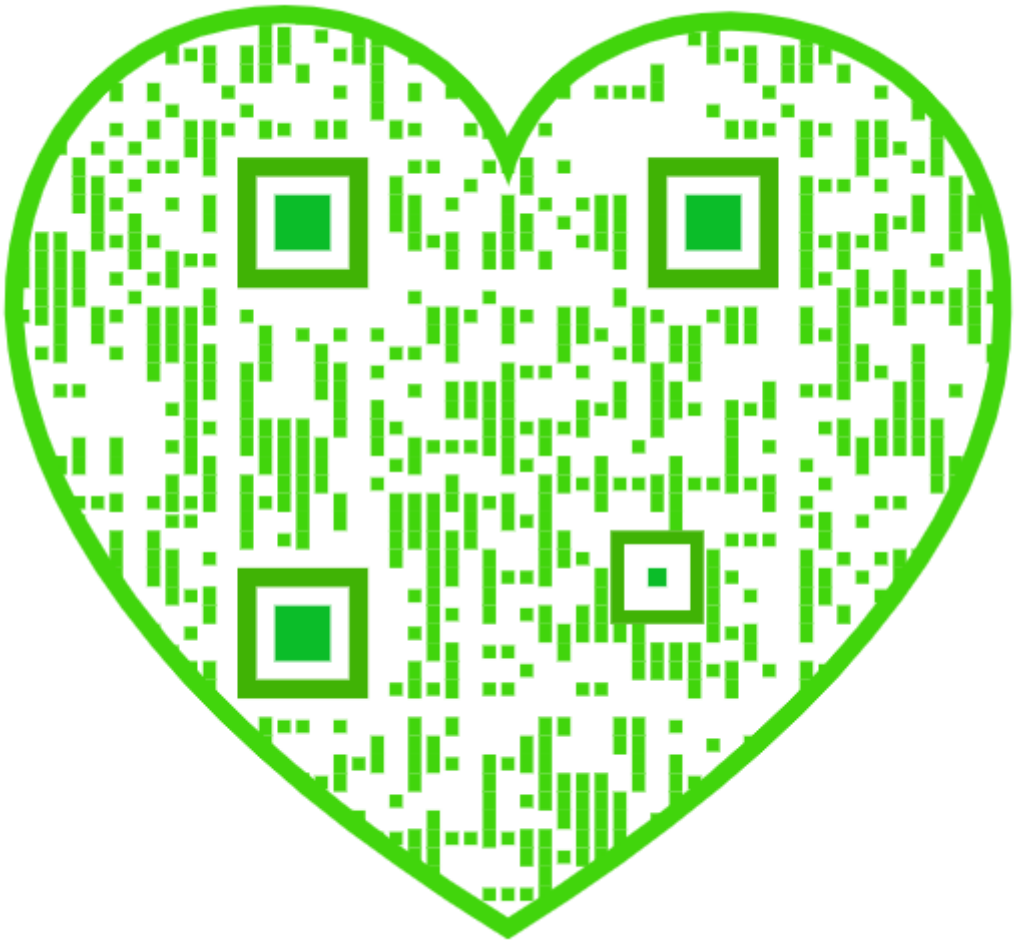
OPERATION & MAINTENANCE

ARMALITE'S AR-180

COVER



SAFETY PRECAUTIONS

1. Always handle any gun as if it were loaded.
2. Keep on safety at all times except when intending to fire.
3. Before use, check that the barrel is free of any obstruction. **ALWAYS** check after a fall.
4. Be particularly careful when unloading the rifle to check the chamber **after the magazine has been removed** to assure a live round does not remain in the rifle.
5. **Never** point a gun in other than a "safe" direction even if you know it is empty.

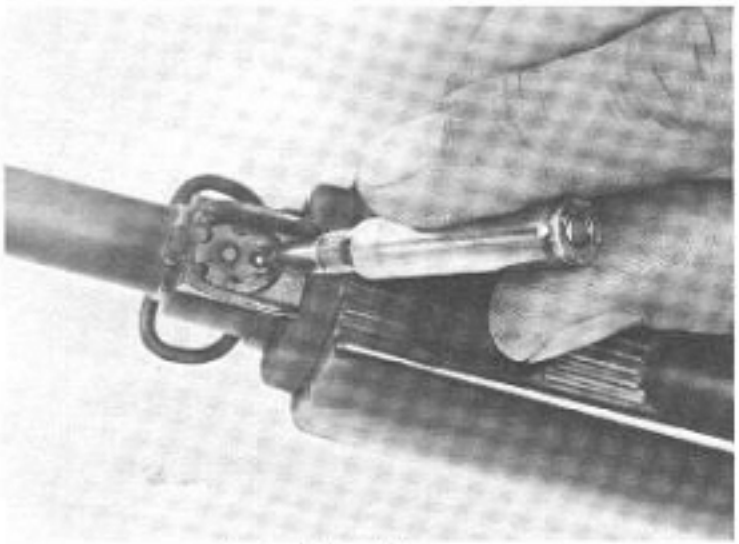
INTRODUCTION

1-1. DESCRIPTION AND DATA

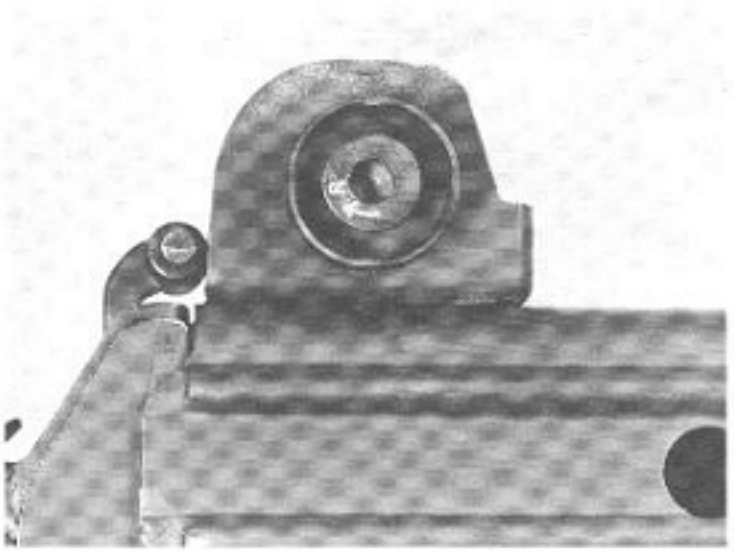
1-2. DESCRIPTION. The AR-180 rifle is a light-weight, air cooled, gas operated rifle; magazine fed and designed for semi-automatic fire only. Each rifle is provided with two 5-round magazines, sling and cleaning rod.

1-3. The barrel is air-cooled and is provided with a flash suppressor and recoil compensator. The barrel is surrounded by a heat resisting fiberglass material, which serves as a handguard and forearm. The handguard has a heat reflecting metal inner shield.

1-4. The front sight is adjustable for elevation and the rear sight for windage. Fig. No. 1 & 2.



Front Sight Adjustment
Figure no. 1



Rear Sight Adjustment
Figure no. 2

1-5. The rifle has a folding buttstock for convenience in carrying and stowage. The buttstock and pistol grip are made of extremely durable, glass impregnated nylon of high impact strength unaffected by exposure. The stock may be folded by compressing the 2 spring loaded plungers with the thumb and forefinger at the same time exerting pressure to the left on the buttstock. The stock is then snapped into position on the snap fastener post. The stock is extended by striking the buttstock smartly with the palm of the hand. It will snap into position instantaneously. Fig. No. 3.

AR-13 Stock Folded
Figure no. 3

1-6. The rifle is readily opened by pressing the guide spring plate forward, providing ready access for removal of the bolt carrier assembly and upper handguard. Fig. No. 4. It also provides accessibility to all otherworking parts for convenient cleaning and inspection. If ever required, the manual charging handle provides a means of forcing the bolt forward to full lock position or to extract a stuck case.

Disengage Takedown
Figure no. 4

1-7. The bolt incorporates seven locking lugs. Upon closing, the bolt rotates to engage seven similar locking lugs in the barrel extension, thus, the full force of the ignition of the powder charge is absorbed by the barrel extension and bolt. No pressure is exerted upon the receiver. The receiver is made of light-weight steel stampings. The design contributes to a high degree of safety, durability and performance of the rifle. Due to the light weight, portability and convenience for carrying is greatly enhanced.

SPECIFICATIONS

Weight	
AR-180 Rifle without Magazine	7.2 lbs.
Empty Aluminum Magazine (20-rounds)	.2 lbs.
Loaded Magazine (20-rounds)	.7 lbs.
AR-180 Rifle with Loaded Magazine	7.9 lbs.
Length	
Rifle with Flash Suppressor-Compensator	38 in.
Barrel	18¼ in.
Barrel with Flash Suppressor	19.8 in.
Mechanical Features	
Rifling, R.H. 6 grooves - 1 turn in 12"	
Bore Maximum	.2190
Groove	.2235
Sight Radius	19.5 in.
Trigger Pull	7.0 - 8.0 lbs.
Method of Operation	Gas
Type of Mechanism	Rotating Bolt
Ammuniton	
Caliber	5.56 mm (.223)
Firing Characteristics	
Muzzle Velocity (Average)	3250 fps
Muzzle Energy	1300 ft. lbs.
Chamber Pressure	50,000 psi
Maximum Rate of Fire Semi-Automatic	45/65 rds. per min.
Sustained Rate of Fire	12/15 rds. per min.
Maximum Range	2653 meters
Maximum Effective Range	460 meters

OPERATING INSTRUCTIONS

2-1. LOADING THE MAGAZINE. The magazine has been blocked to accept only 5 rounds. The magazine follower has a raised portion generally resembling the outline of a cartridge. Cartridges are loaded into the magazine so that the tips of the bullets point in the same direction as the raised portion of the follower.

2-2. LOADING THE RIFLE. The magazine may be inserted with the bolt and the bolt carrier open or closed.

WARNING

Set Selector Switch on "Safe."

Hold the forearm of the rifle with the left hand, pointing the muzzle in a **safe** direction, with the right hand, insert a loaded magazine into the magazine housing. Push upward until the magazine latch engages and hold the magazine. Rap base of magazine sharply with heel of hand to assure positive retention. Check by attempting to withdraw the magazine without the use of the magazine release. If the action is open, grasp the charging handle with the right hand, pull to the rear thus disengaging the bolt stop and release the charging handle. A round will be stripped from the magazine and loaded into the chamber. If the action is closed when the magazine is inserted, pull the charging handle fully to the rear and release it. **NOTE:** Do not "ride" the charging handle forward. If the charging handle is eased forward from the open position, the bolt may fail to rotate and fully lock and it cannot fire. If the bolt fails to go all the way forward, push forward on the manual charging handle. The rifle is now loaded and ready to fire.

WARNING

Make Sure The Selector Lever Is On The "Safe" Position, If Not Ready To Fire.

2-3. The dust cover may be closed after a cartridge is chambered to keep out any foreign matter. The cover opens automatically with firing of the first round or by moving the charging handle slightly to the rear. It must be closed manually.

2-4. FIRING.

2-5. SEMI-AUTOMATIC POSITION. With the selector lever in this position, the rifle will fire one round each time the trigger is pulled.

2-6. WITH STOCK FOLDED. The selector lever must be positioned from the right side of the rifle, as the folded stock prevents access to the lever on the left side. Fig. No. 5.

AR-18 Stock Folded
Figure no. 5

If it is desired to fire the rifle with the stock folded, the user should become fully familiar with the operation of the selector lever from the right side of the rifle. The forefinger of the right hand should be used to allow the continued proper hold on the pistol grip (a left-handed shooter would use the thumb of the left hand).

2-7. IMMEDIATE ACTION PROCEDURES FOR REMOVING A LIVE ROUND IN CASE OF FAILURE TO FIRE.

A. Wait 10 seconds then pull charging handle fully to the rear, observe for ejection of cartridge or cartridge case.

UNLOADING INSTRUCTIONS

2-8. Be sure the safety selector is on "safe". Remove the magazine. Fig. No. 6

Remove Magazine
Figure no. 6

Eject any cartridge in the chamber by pulling charging handle to the rear.
Inspect chamber.
Release the charging handle.
For positive safety; point the rifle in a safe direction, take off safe, pull the trigger, uncocking the hammer.

SIGHT ADJUSTMENT

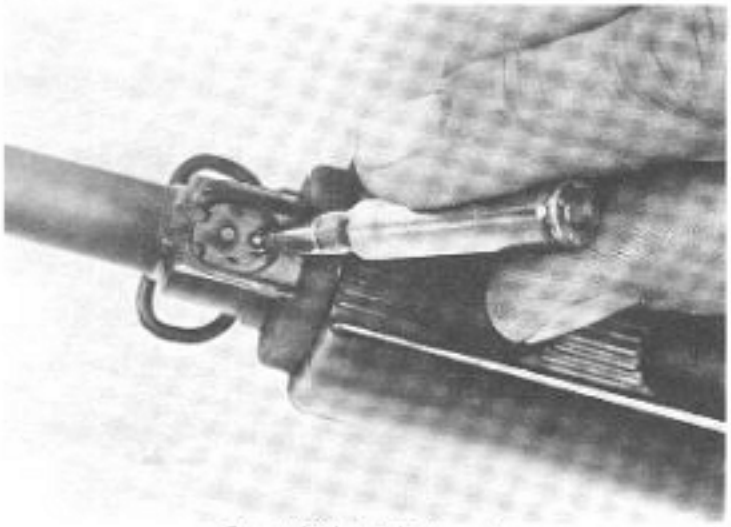
Windage

2-9. In sight adjustment, windage adjustment is made by rotating the windage drum. Rotation of one notch in the direction of the arrow will change the point of impact of the bullet 1" to the right at 100 yards. Reversing the rotation will cause the bullet to strike to the left the same amount.

Elevation

2-10. Set the rear sight on normal setting for distances up to 300 yards. For distances beyond 300 yards, move the rear sight to the long range position.

2-11. Adjust the front sight by depressing the detent with a solid bullet point or punch and rotate the sight post. Rotating the post clockwise will raise the point of impact; reversing the direction will lower the point of impact. Each detent will change the point of impact 1" at 100 yards. Fig. No. 7.



Front Sight Adjustment
Figure no. 7

DISASSEMBLY / ASSEMBLY

3-1. DISASSEMBLY. See Fig. 13 thru 28.

3-2. Push the guide rod plate forward at the same time pushing the plunger on the right hand side of the guide rod plate to the left clearing the rear sight. This will allow the guide rods to clear the rear of the receiver and the rifle will swing open. Fig. No. 8.

Disengage Takedown
Figure no. 8

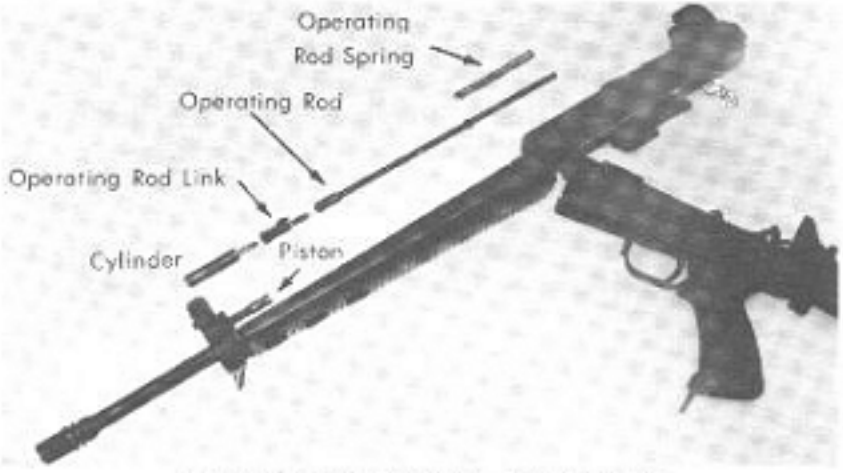
Release pressure gradually on the guide rod plate to preclude the springs forcing the guide rod plate and rods from jumping free of the receiver. Pull the charging handle to the rear, moving the bolt carrier in alignment with the enlarged rear section of the ejection port. Lift the charging handle free of the bolt carrier and receiver. The guide rod assembly, springs and bolt carrier may then be allowed to slide out of the upper receiver. Fig. No. 9, 10 & 11.

Disengage/Engage Takedown
Figure no. 9

Remove/Install Bolt Carrier, Guide Rods and Guide Rod Springs
Figure no. 11

Withdraw/Insert Charging Handle
Figure no. 10

3-3. The bolt carrier assembly may then be stripped as illustrated on page 10.
3-4. Remove hand guard and disassemble operating rod assembly. Fig. No. 12. This will conclude field stripping, allowing access to all internal components.



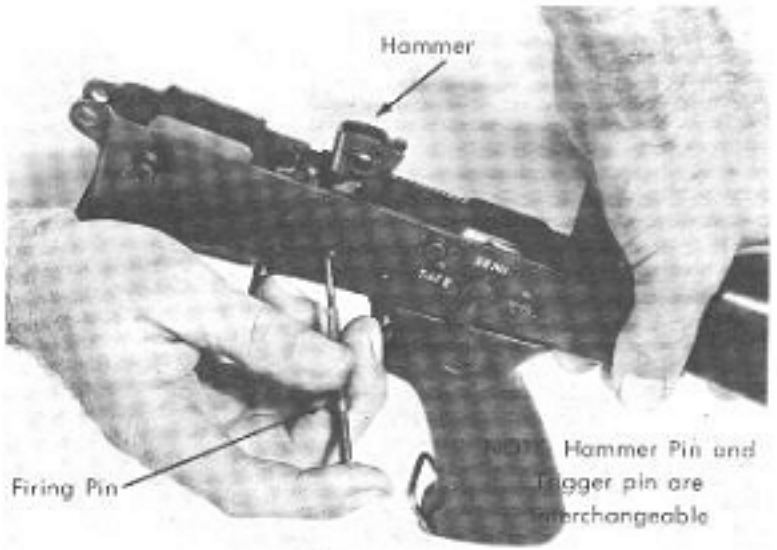
Remove/Install Operating Rod Assembly
Figure no. 12

3-5. ASSEMBLY.

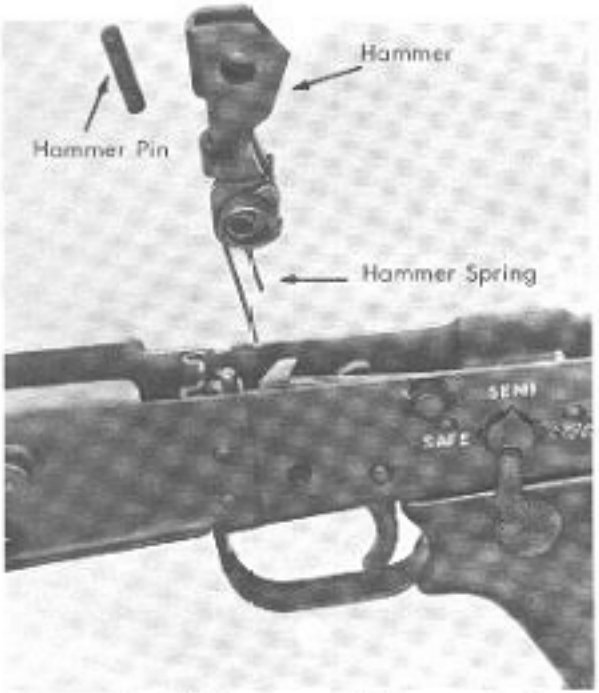
3-6. Reverse the above procedure.

NOTE: A) Upon reassembly, be sure that the bolt is fully extended forward until the locking lug is engaged. Pay particular attention not to bump the bolt forcing it to the rear when inserting the bolt assembly into the upper receiver. **B)** The hammer must be in the cocked position to close the rifle. **C)** Be sure the bolt disconnect (Part No. 145, page 20,) is rotated in its forward position. It will otherwise stop the rifle from being closed and locked. **D)** Be careful that small parts are not lost during disassembly/assembly; **particularly** assure that the firing pin spring is installed. Assembly **without** this spring could cause inadvertant firing of the cartridge if a primer was overly sensitive due to inertia impact of the firing pin upon bolt closure. See Fig. No. 22.

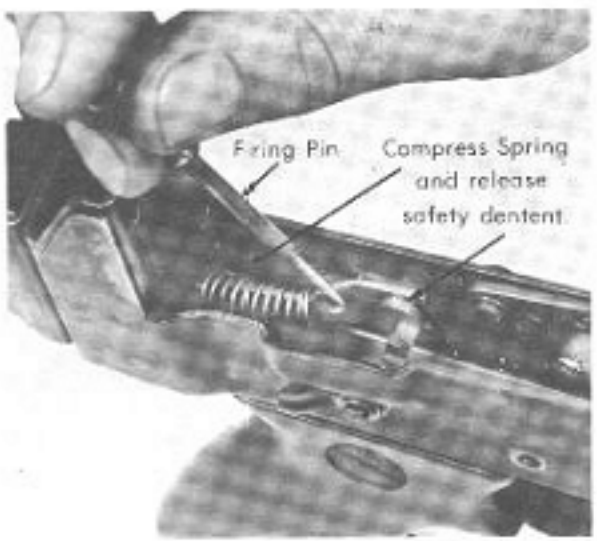
Rifle, 5.56mm, AR-18 Major Groups
Figure no. 13



Remove/Install Hammer Pin
Figure no. 14

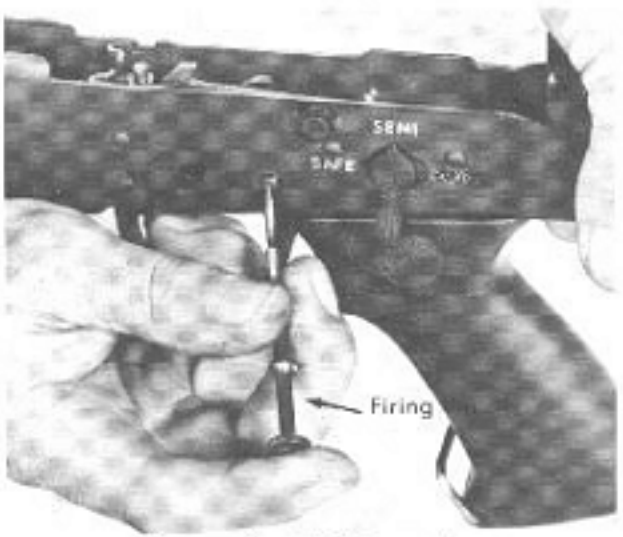


Remove/Install Hammer and Hammer Spring
Figure no. 15



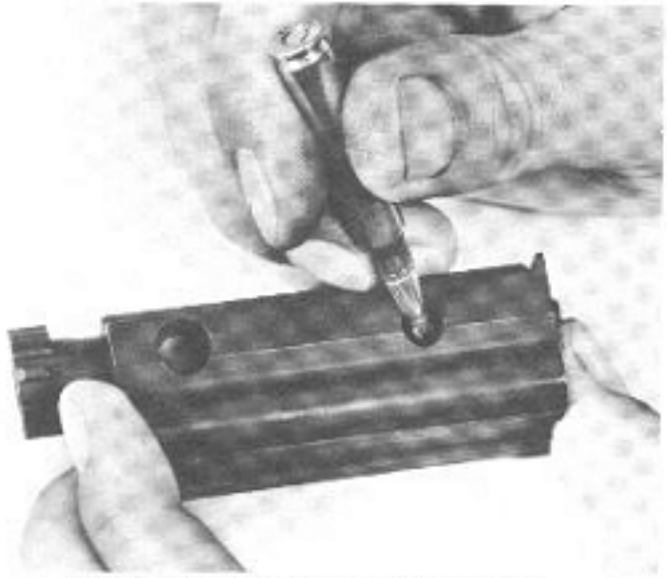
Disengage/Remove Selector Lever
Figure no. 16

Disengage/Remove Selector Lever
Figure no. 17

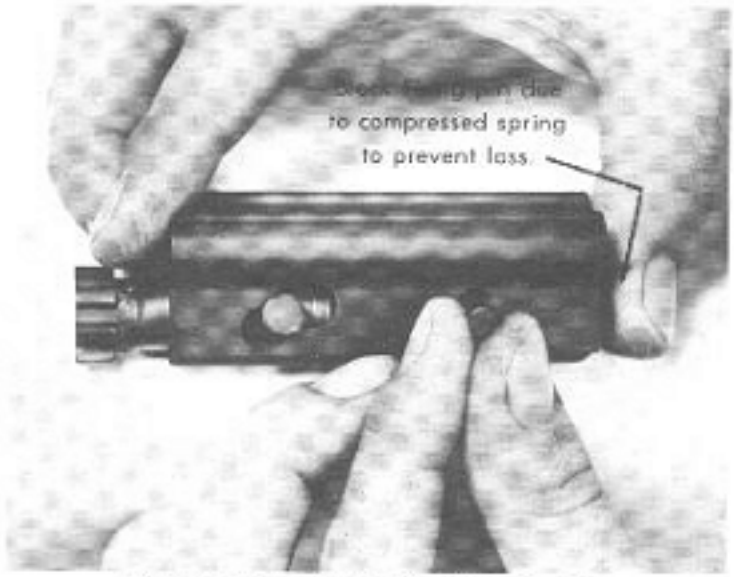


Remove/Install Trigger Pin
Figure no. 18

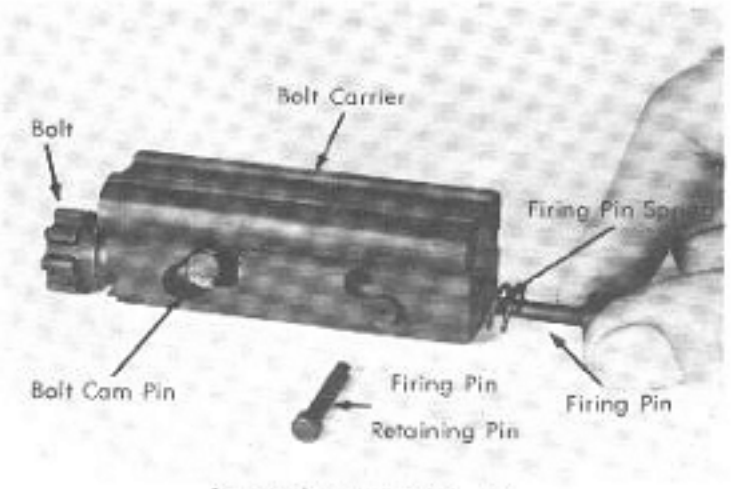
Remove/Install Trigger
Figure no. 19



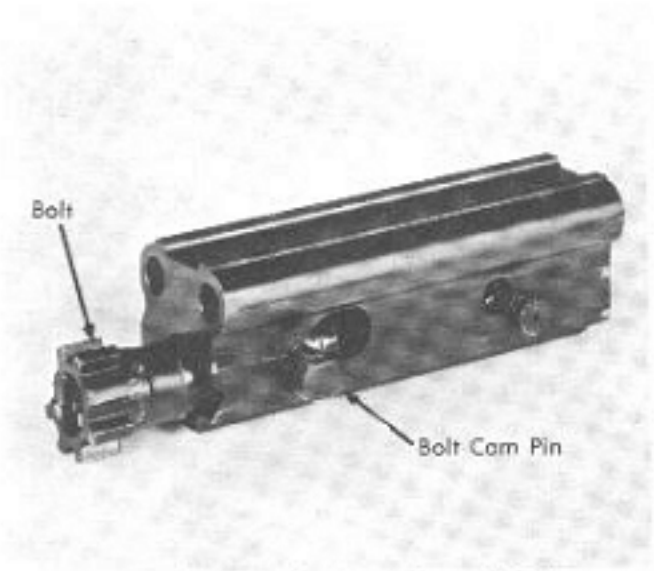
Remove/Install Firing Pin Retaining Pin
Figure no. 20



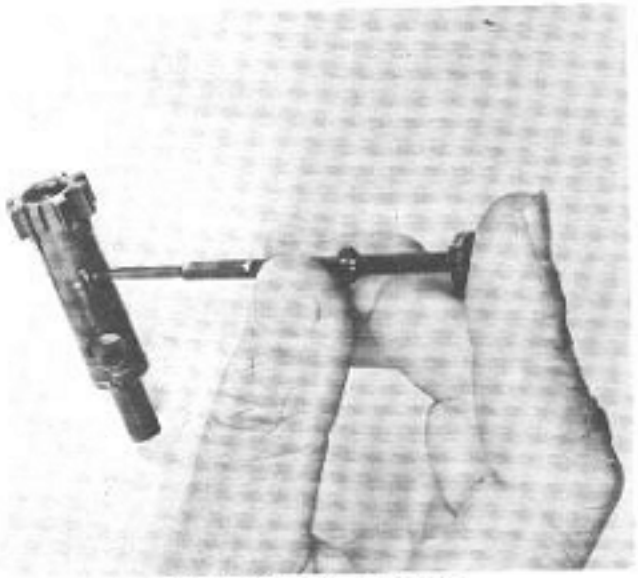
Remove/Install Firing Pin Retaining Pin
Figure no. 21



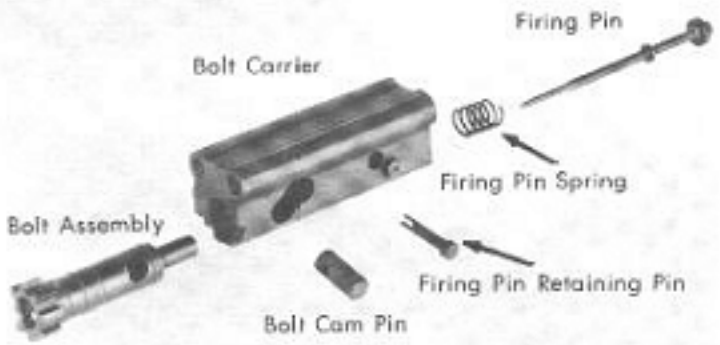
Remove/Install Firing Pin
Figure no. 22



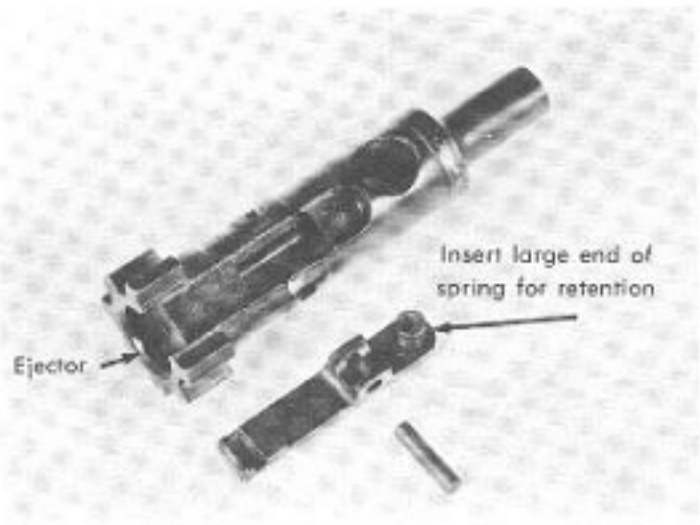
Remove/Install Bolt Cam Pin and Bolt
Figure no. 23



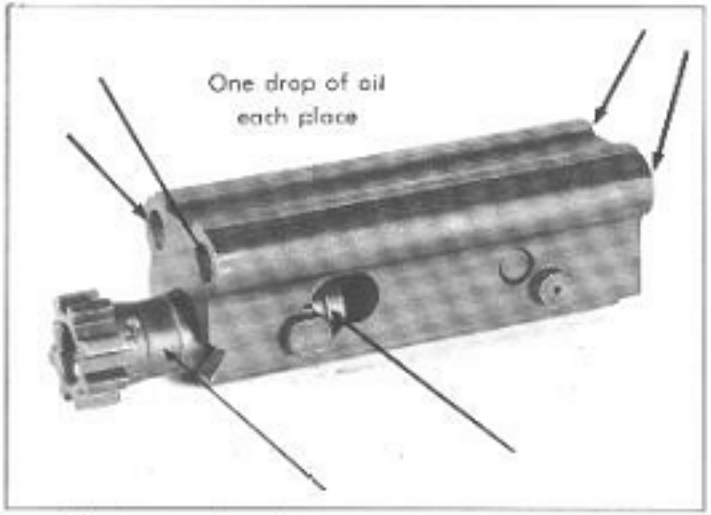
Remove/Install Extractor
Figure no. 25



Bolt Carrier Group Parts
Figure no. 24



Bolt Assembly
Figure no. 26



Cleaning and Lubricating the Bolt Carrier Group
Figure no. 27

Disengage/Engage Receiver Pivot Pin
Figure no. 28

MAINTENANCE INSTRUCTIONS

4-1. LUBRICATION

4-2. GENERAL. The rifle should be cleaned and lubricated at the end of each day's use, or when exposed to an excessive amount of dirt, grit or other foreign matter and/or water. For best continued operation, all surfaces should be protected by a very light film of oil, except under sub-zero temperatures when all oil should be removed from moving components. The rifle can function completely dry, although lack of lubricant is undesireable due to resultant excessive wear. **NOTE:** Keep the gas piston clear of excess oil to prevent early formation of carbon.

4-3. CLEANING AND LUBRICATING THE BARREL.

A. Attach a brass wire brush to a cleaning rod, dip in solvent cleaning compound and brush the bore thoroughly. Do not submerge barrel in cleaning solution. Brush the bore from chamber to muzzle, using straight-through strokes. **NOTE: DO NOT** reverse direction of brush while inside bore. Push the brush through the bore until it extends clear of the muzzle. Continue until the bore is well covered with solvent. Remove the brush from the rod and dry the bore by pushing through clean, dry patches. Continue until patches come out clean and dry.

B. Clean the locking lugs in the barrel extension, just to the rear of the chamber. Brush the lugs with a small brush.

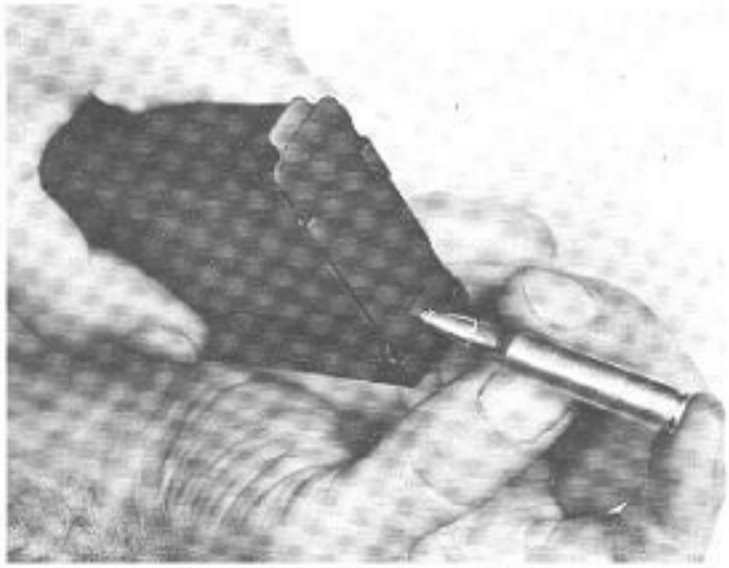
C. After cleaning, lubricate the bore with a lightly oiled patch to prevent corrosion and pitting. Lightly oil the lugs in the barrel extension.

D. Remove the individual component parts of the operating rod. Wipe clean with oil-soaked patches. Use the cleaning rod with the brush to clean the gas piston. Remove any excess oil.

4-4. CLEANING AND LUBRICATING THE BOLT CARRIER GROUP.

A. Remove the bolt carrier group from the upper receiver. Field strip the bolt carrier group. Wash all external surfaces with a patch saturated in solvent cleaning compound. See Fig. No. 12, 20 thru 26.

B. Using a small brush dipped in solvent cleaning compound, scrub all carbon deposits and dirt from the locking lugs of the bolt. Pay particular attention to the area under the face of the extractor. Oil lightly. See Fig. No. 27.

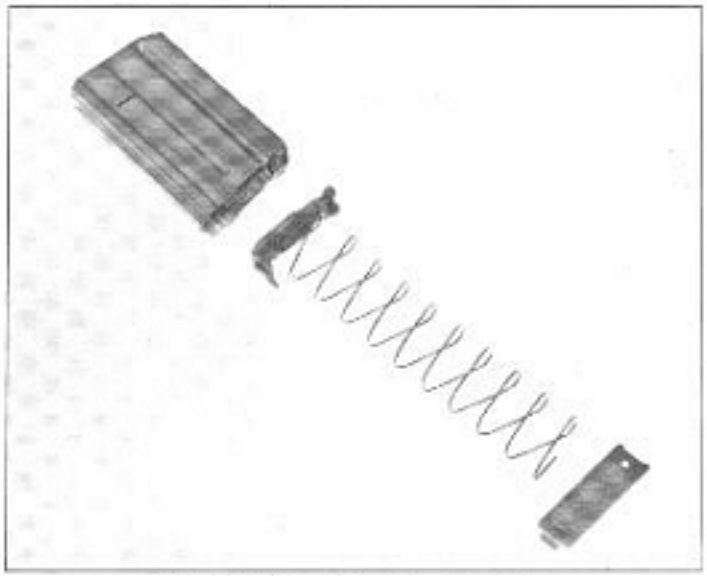


Disassemble/Assemble Magazine
Figure no. 29

ACCESSORIES

5-1. MAGAZINE.

5-2. MAGAZINE DIS-ASSEMBLY. Inspect the magazine and make sure it is empty. Depress the magazine spring through the hole in the magazine base plate, releasing the tip of the spring from the base plate. Fig. No. 29 & 30.



Disassemble/Assemble Magazine
Figure no. 30

5-3. TELESCOPIC SIGHT. The telescopic sight is one of extremely durable design with outstanding optical capabilities made especially for Armalite. It is a true 2.75 power sight (normally termed 3X). The range knob on the top has 4 settings; one for 1-200 yards; 1 each for 300, 400 and 500 yards. This rapid and positive elevation system contributes greatly to practical usage. The protective cap on the top of the range adjustment knob is removed by the use of the head of a cartridge. Sight elevation adjustments are made under this cap by rotating the elevation knob with the head of a cartridge in the direction of the arrow to move the point of impact up.
Fig. No. 31.

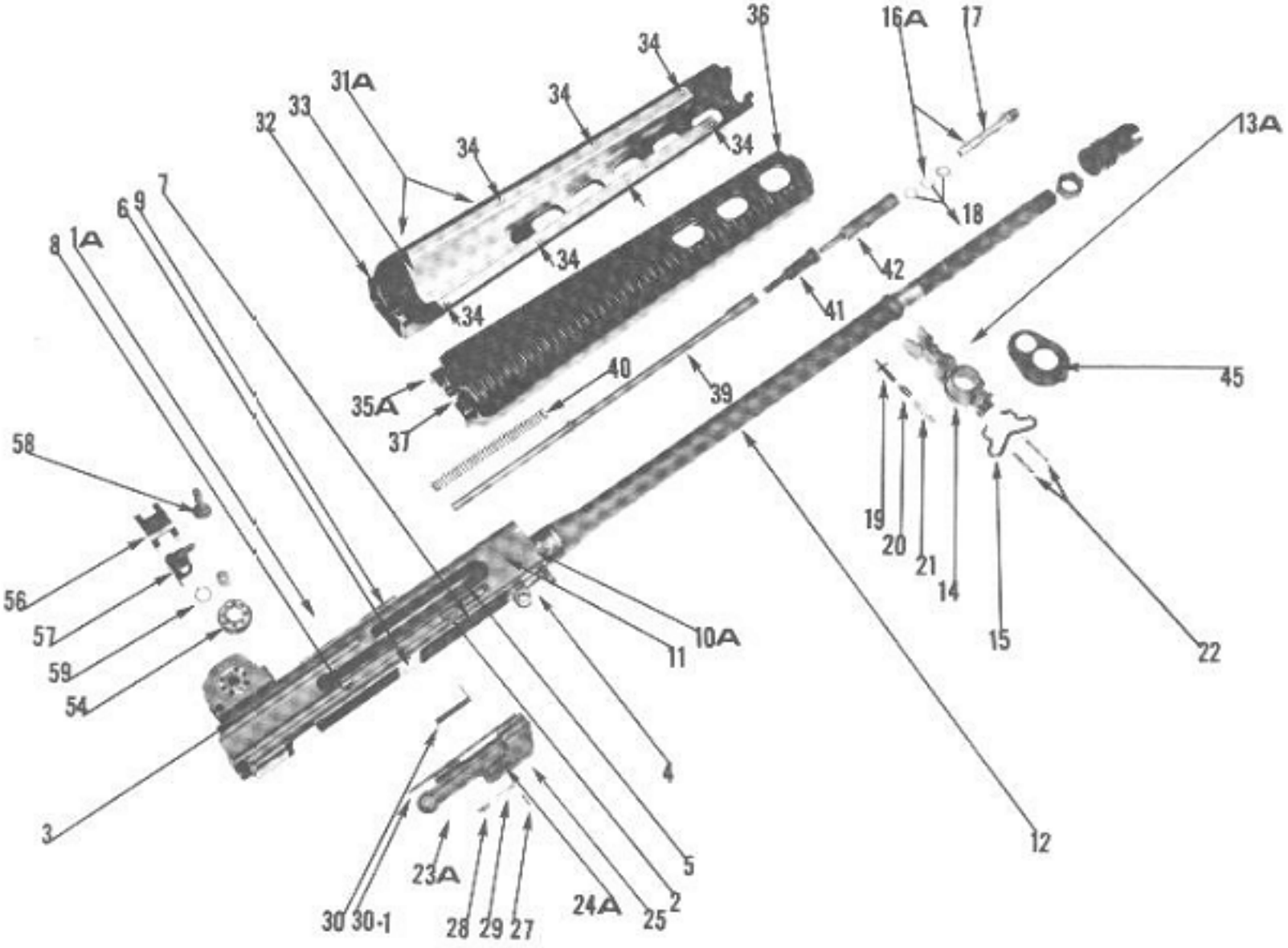
Figure no. 31

5-4. The sight incorporates an inverted post as well as fine cross-hairs. When "holding over" at extreme ranges, this precludes the post from blotting out the target. This comparatively heavy post allows positive point of aim at times of near darkness when the fine cross-hairs tend to disappear against the background.
5-5. The quick detachable mount allows immediate removal and returned installation. Regardless of the number of times removed, due to the dove tail design of the base and mount, it will return to a postive zero. A tunnel under the sight allows use of the iron sights in case of any immediate requirement.
5-6. Dust covers are included and the fine lens should be protected by the use of these covers. This sight is invaluable for target identification purposes contributing greatly to safety in the use of the firearm.
5-7. INSTALLATION. Hold the telescopic sight in the right hand, the forefinger compressing the safety lever on the front of the mount allowing it to clear the dove tail base on the rifle. The plunger at the rear of the mount is pressed firmly against the front of the rear sight compressing the spring, allowing the scope mount to slide forward on the base.

UPPER RECEIVER GROUP

Fig. No.	Mfg. Stock No.	DESCRIPTION	No. in Rifle
1A	S2632	Assy, Weld & Rivet, Upper Receiver	
2 *	S2631	Receiver, Upper	1
3 *	2680	Housing, Rear Sight	1
4 *	2580	Extension, Barrel	1
5 *	2674	Guide Track, Upper Receiver	1
7 *	2840	Lug, Front, Dust Cover	1
8 *	2841	Lug, Rear, Dust Cover	1
9 *	2785	Plate, Scope Mount	1
10A	2679	Assy, Barrel to Upper Receiver	
11 *	S2632	Upper Receiver Weld & Rivet Assy	1
12 *	2626	Barrel	1
13A	2856	Assy, Front Sight	
14	2634	Front Sight (Factory Installation Only)	1
15	2776	Swivel Sling, Front Sight	1
16A	2857	Assy, Piston Front Sight	
17	2643	Piston, Front Sight	1
18	2763	Ring, Piston	3
19	2635	Blade, Front Sight	1
20	2636	Plunger, Front Sight	1
21	2677	Spring, Plunger, Front Sight	1
22	2637	Taper Pin, Front Sight	2
23A	2855	Assy, Dust Cover	
24A	2845	Weld Assy, Dust Cover	1
25 *	2837	Cover, Dust	1
26 *	2842	Cam Follower, Dust Cover	1
27	2844	Spring, Plunger, Dust Cover	1
28	2843	Plunger, Cam Follower, Dust Cover	1
29	2780-1	Roll Pin	1
30	2838	Spring, Hinge Pin, Dust Cover	1
30-1	2839	Hinge Pin, Dust Cover	1
31A	2717	Assy, Upper Hand Guard	
32 *	2629	Hand Guard Upper	1
33 *	2663	Liner, Upper Hand Guard	1
34	2779	Drive Screw	8
35A	2716	Assy, Lower Hand Guard	
36 *	2630	Hand Guard, Lower	1
37 *	2664	Liner, Hand Guard, Lower	1
38	2779	Drive Screw	8
39	2641	Operating Rod	1

* Indicates part of an assy not available separately.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10A
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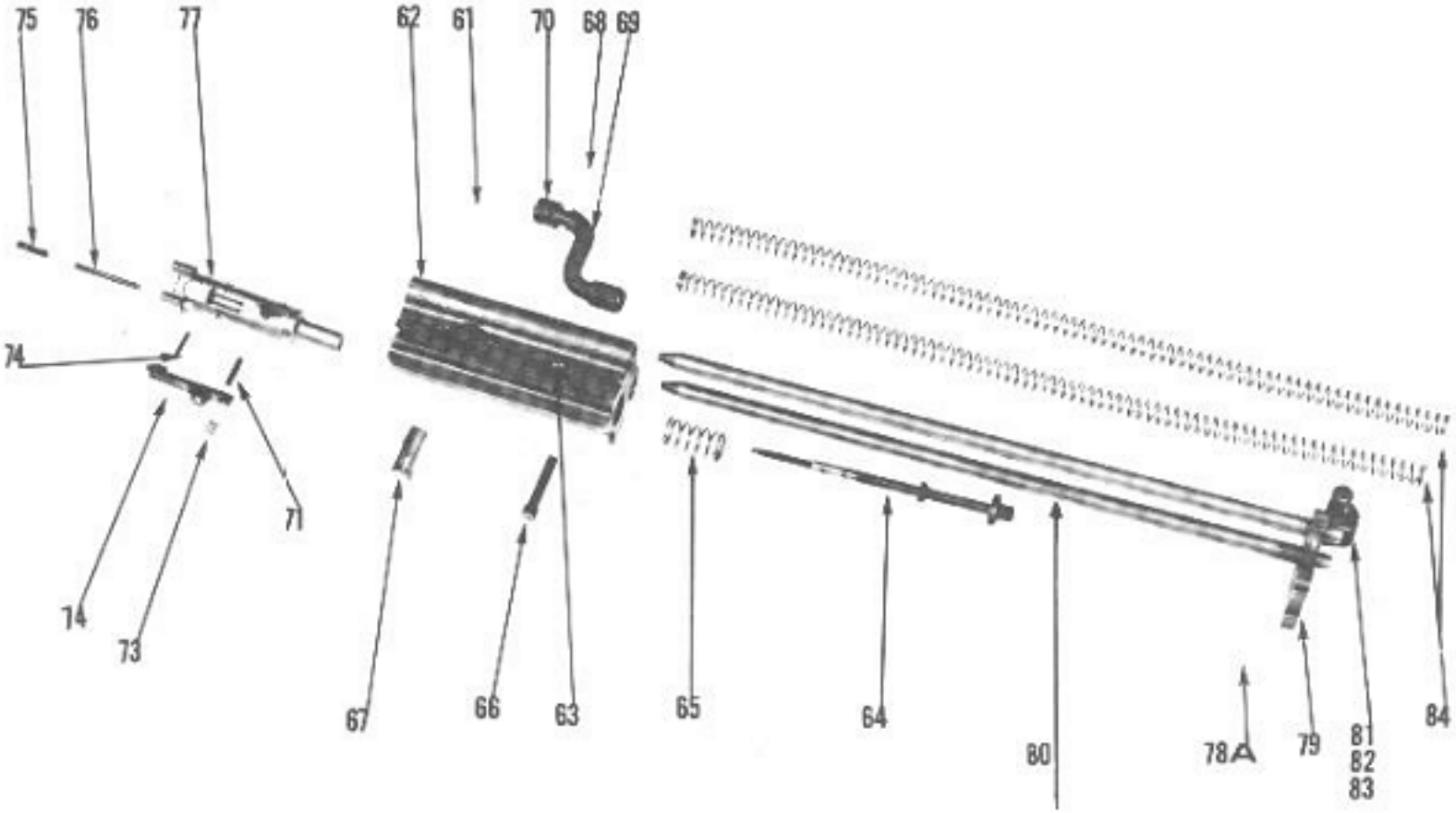
40	2678	Spring, Operating Rod	1
41	2639	Link, Operating Rod	1
42	2642	Cylinder, Operating Rod	1
43	2846	Nut, Recoil Compensator	1
44	2775	Recoil, Compensator	1
45	2644	Cap, Hand Guard	1
54	2685	Drum, Windage, Rear Sight	1
55	2676	Spring, Rear Sight	1
56	2682	Spring, Flat, Rear Sight	1
57	2681	Aperature, Rear Sight	1
58	2683	Screw, Windage Rear Sight	1
59	2791	Protector, Rear Sight Screw	1
60	2853-1	Snap Ring, Rear Sight	1

BOLT GROUP

61A	2705	Assy, Bolt Carrier	
62 *	S2646	Carrier, Bolt	1
63 *	2684	Pin, Press Fit, Bolt Carrier	1
64	2671	Firing Pin	1
65	2715	Spring, Firing Pin	1
66	2673	Takedown Pin, Bolt	1
67	2590	Pin, Cam	1
68A	2836	Assy, Charging Handle	
69 *	2594	Handle, Charging	1
70 *	2835	Key, Charging Handle	1
71	2667	Pin, Extractor	1
72	2668	Spring, Extractor	1
73	2666	Extractor	1
74	2780-3	Roll Pin, Ejector	1
75	2669	Ejector	1
76	2670	Spring, Ejector	1
77	2665	Bolt	1
78A	2662	Assy, Stake, Guide Rod	
79 *	2660	Forging, Plate, Guide Rods	1
80 *	2661	Guide Rod	2
81	2764	Plunger, Guide Rod Plate	1
82	2765	Spring, Plunger, Guide Rod Plate	1
83	2780-1	Roll Pin, Plunger, Guide Rod Plate	1
84	2606	Spring, Action	2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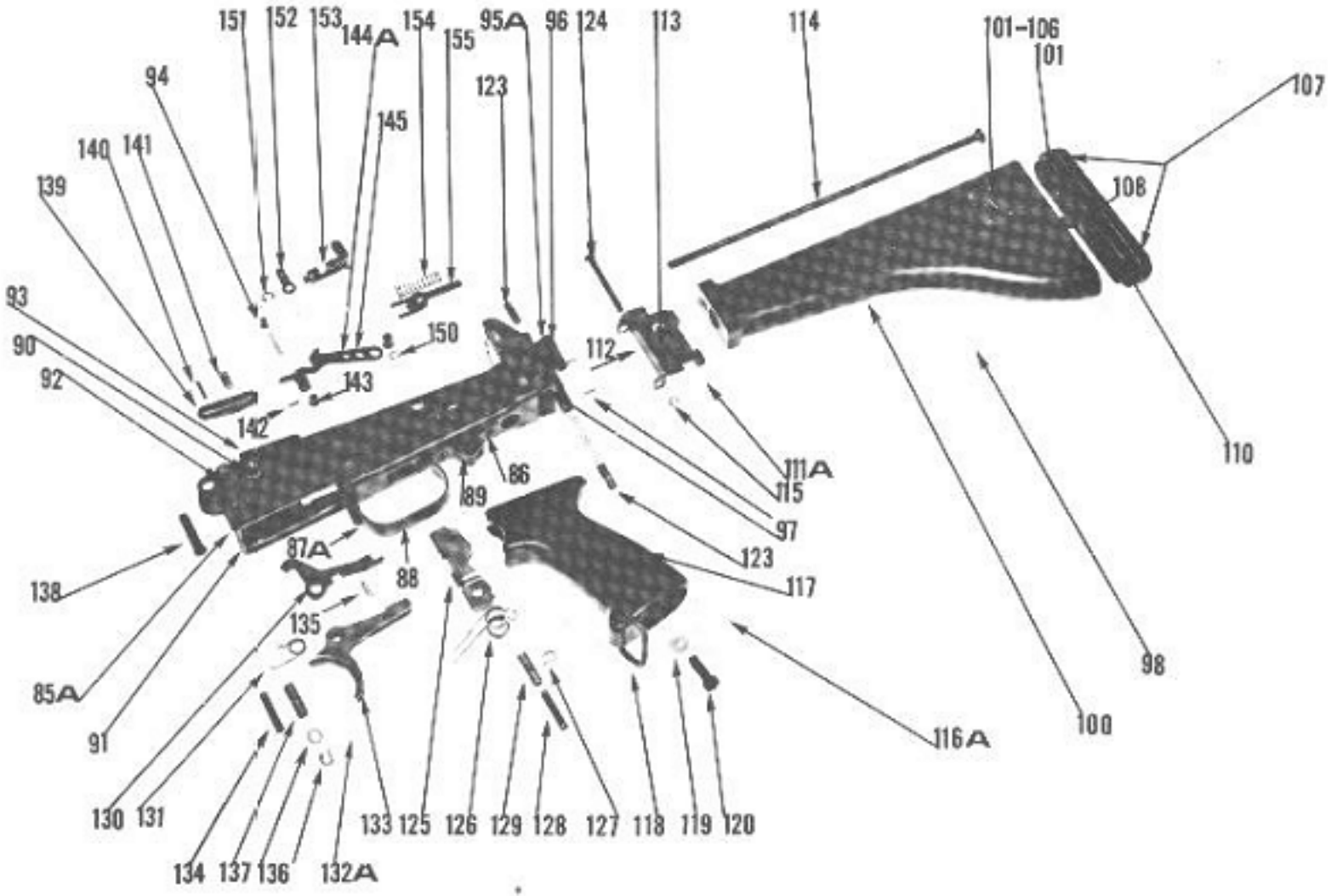
LOWER RECEIVER GROUP

85A	S2628	Assy, Weld & Rivet, Lower Receiver	
86	2687	Rivet, Trigger Guard	2
87A*	2858	Weld Assy, Trigger Guard	
88 *	2645	Trigger Guard	1
89 *	2623	Nut, Pistol Grip	1
90 *	2772-1	Post, Snap Fastener	1
91 *	2627	Receiver, Lower	1
92 *	2782	Bracket, Lower Receiver	1
93 *	2658	Bracket, Magazine Latch	1
94 *	2604	Bushing, Bolt Catch	1
95A*	2753	Weld Assy, Bulkhead	
96 *	2744	Bulkhead, Receiver	1
97 *	2746	Plate, Bulkhead	1
98A	2708	Assy, Buttstock	
99A*	2859	Assy, Fastener, Buttstock	
100 *	2614	Buttstock	1
101 *	2772-2	Cover, Snap Fastener	1
102 *	2772-5	Spacer, Snap Fastener	8
103 *	2772-4	Spring, Snap Fastener	2
104 *	2772-3	Plate, Snap Fastener	1
105 *	2772-6	Rivet, Snap Fastener	4
106 *	2852-1	Washer, Plain, Snap Fastener	4
107A	2860	Assy, Buttcap	
108 *	2618	Buttcap	1
109 *	2621	Recoil Pad	1
110	2774	Screw, Recoil Pad	2
111A	2752	Weld Assy, Hinge, Buttstock	
112 *	2760	Hinge, Buttstock	1
113 *	2754	Nut, Buttstock Hinge	1
114	2620	Screw, Buttstock	1
115	2854-1	Snap Ring, Hinge Pin, Stock	1
116A	2861	Assy, Pistol Grip	
117 *	2617	Pistol Grip	1
118 *	2696	Sling, Swivel, Pistol Grip	1
119	2723	Washer, Plain, Pistol Grip	1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120		2622	Bolt, Pistol Grip	1
121		2780-2	Roll Pin, Plunger, Bulkhead	2
122		2762	Spring, Plunger, Bulkhead	1
123		2761	Plunger, Bulkhead	2
124		2586	Hinge Pin	1
125		S2609	Hammer	1
126		2653	Spring, Hammer	1
127		2651	Snap Ring, Hammer, Trigger	2
128		2650	Pin, Hammer, Trigger	2
129		2610	Bushing, Hammer	1
130		2607	Disconnect, Trigger	1
131		2695	Spring, Disconnect	1
132A		2712	Assy, Riveted, Trigger	
133	*	2647	Trigger	1
134	*	2608	Assy Pin, Trigger	1
135		2652	Spring, Trigger	1
136		2649	Spacer, Trigger	1
137		2648	Bushing, Trigger	1
138		2781	Takedown Pin, U & L Receivers	1
139		2657	Latch, Magazine	1
140		2780-4	Roll Pin, Magazine Latch	1
141		2702	Spring, Magazine Latch	1
142		2780-2	Roll Pin, Bolt Catch	1
143		2603	Retainer, Spring, Bolt Catch	1
144A		2601	Weld Assy, Bolt Catch	
145	*	2597	Bolt Catch	1
146	*	2599	Housing, Plunger, Bolt Catch	1
147		2602	Spring, Plunger, Bolt Catch	1
148		2600	Plunger, Bolt Catch	1
149		2605	Pin, Bolt Catch	1
150		2854-4	Snap Ring, Bolt Catch	1
151		2854-1	Snap Ring, Safety Lever	1
152		2768	Lever, Safety	1
153		S2595	Casting, Safety	1
154		2701	Spring, Safety Detent	1
155		2598	Detent, Safety	1

ACCESSORIES

156	2688	Magazine Assy, 20-Round
157	S2848	Five Round Insert
160	2773-5	Bipod
161	2864	Case, Bipod
162	2865	Scope, 2.75 x 20mm with Mount
163	2866	Cleaning Rod AR-18
164	2867	Bore Brush, Caliber .22 (For Cleaning Rod, AR-18 only)
165	2868	Sling

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BACK COVER